

IN THE SPECIFICATION:

Paragraph beginning at line 20 of page 3 has been amended as follows:

A sector arm constituting a part of the driving force transmitting mechanism ~~or~~ for the sectors is provided with a sector urging member for urging the sectors in one of the aperture-opening direction or the aperture-closing direction. By providing the sector urging member, rattling due to slight size variations and play in the parts of the driving force transmitting mechanism or among the sectors may be adjusted by urging these members in one direction, so that the aperture can always be opened and closed without variation. In particular, when a gear transmission mechanism is employed as the drive force transmitting mechanism, the influence in rattling due to backlash of the gears increases, and hence the presence of the sector urging member is very important.

Paragraph beginning at line 3 of page 6 has been amended as follows:

The sector drive unit 2 includes an electromagnetic actuator 4 mounted on a unit case 3 (hereinafter, referred to as an "actuator") 4, a synchronous switch 5 serving as a

sector position detecting unit (described below), a driving force transmitting mechanism 7 (described below) mounted on the lower side of an intermediate member 6, and the printed board P for supplying electric power to the actuator 4 and the synchronous switch 5. The sector drive unit 2 is positioned on the front surface of the base plate 1 and fixed to the base plate 1 via screws 10 as fixing members. The sectors 12 are provided on the rear surface of the base plate 1 so that the aperture 1a can be opened and closed by the driving force transmitting ~~member~~ mechanism 7.

Paragraph beginning at line 9 of page 8 has been amended as follows:

The actuator 4 is secured in a state of being pressed against a top board member 3a of the unit case 3 by the intermediate member 6. A rotary shaft 4d is formed integrally with the rotor 4c so as to penetrate the intermediate member 6 and project from the lower surface thereof. A drive lever 8 constituting a part of the drive force transmitting mechanism 7 is provided at the extremity (lower end in Fig. 3) of the rotary shaft 4d of the actuator 4. A sector drive lever 9 capable of being moved in conjunction with the drive lever 8 is pivotably supported by a shaft member 6b projecting from the lower surface of the

intermediate member 6. The sector drive lever 9 constituting a part of the driving force transmitting ~~member~~ mechanism 7 is interlocked with the drive lever 8 by engagement of teeth (sector driving gear) 9a with teeth (driving gear) 8a of the drive lever 8. The drive lever 8 is formed of a fan-shaped plate member fanning out to a small extent, and the narrow end portion of the fan is secured to the rotary shaft 4d of the actuator 4 so as to be capable of integrally rotating therewith. The teeth 8a of the drive lever 8 are formed or machined on an arcuate portion formed at the extremity of the drive lever 8.

Paragraph beginning at line 3 of page 9 has been amended as follows:

As shown in Figs. 1 and 2, the sector drive lever 9 has a portion formed into an arcuate shape at a predetermined distance from the rotational center, and this arcuate portion is provided with the teeth 9a along part of the periphery thereof. The driving force transmitting ~~member~~ mechanism 7 includes a gear transmission mechanism including the teeth 8a, 9a, and the speed ratio (gear ratio) of the gear transmission mechanism is inversely proportional to the distance from the rotational center of each lever to each pitch circle (radius of the pitch circle). Therefore, by providing several sets or

different combinations of the drive lever 8 and the sector drive lever 9 each having a different gear ratio for use with various types of sectors, the flexibility of design and manufacture increases significantly. By making the step angle of the actuator 4 and the pivotal angle of the sector arm 13 the same, one-pulse drive of the actuator 4 can move the sectors 12 by an appropriate amount required for fully opening or closing the aperture 1a. This structure contributes to downsizing or cost reduction of the camera since it avoids the need to provide a pulse drive circuit which is expensive and generates complex pulses continuously.

Paragraph beginning at line 11 of page 14 has been amended as follows:

Referring now to the timing chart shown in Fig. 5, operation of the present embodiment will be described. Among the elements arranged along the ordinate shown in Fig. 5, the phrase "opening-and-closing lever drive coil" designates the drive coil 4b of the actuator 4 in the above-described configuration, the "opening-and-closing lever" represents a lever of the driving force transmitting ~~member~~ mechanism 7, more specifically, the sector drive lever 9. The phrase "exposure of the image pickup device" designates the operation of converting an image of an imaged object into a digital

signal. The abscissa axis of Fig. 5 designates a time period, and the ratio of the length of the time periods is not shown as the actual ratio but rather is exaggerated for the sake of convenience of description.

Paragraph beginning at line 24 of page 14 has been amended as follows:

In the initial state, the supply of power to the drive coil 4b of the actuator is turned OFF, and the sector drive lever 9 and the sectors 12 remain at an initial position (static stable position). At this time, the detection spring 17 and the detection pin 18 of the synchronous switch 5 abut against each other (short-circuited) (See Fig 1). Subsequently, when a release switch (not shown) of the camera body is turned ON, a positive electric current for rotating the rotor in the direction in which the sectors 12 close the aperture 1a is supplied from the CPU, and positional adjustment of the sectors 12 is performed. Subsequently, a negative electric current is supplied by the CPU to the drive coil 4b of the actuator in the direction opposite from the case of positional adjustment, and the rotor 4c rotates in the opposite direction to open the sectors 12 via the driving force transmitting ~~member~~ mechanism 7. At this time, activation of the sectors can easily be made because of the

urging force of the sector urging spring 16. When the opening operation of the sectors 12 is completed, and the aperture 1a is fully opened, an electric current is further supplied in the same direction to prevent rebounding of the sectors 12, that is, positional adjustment is performed. The positional adjustment can be performed continuously by the sector urging member 16 even in the period when the power distribution to the coil 3b is turned OFF. As shown in Fig. 5, one negative electric current pulse (one-pulse drive) is applied to the drive coil 4b to drive the sectors 12 from the aperture-closing position (Fig. 1) to the aperture-opening position (Fig. 2).

Paragraph beginning at line 15 of page 16 has been amended as follows:

Upon completion of the exposure operation, a negative electric current for driving the sectors 12 in the opening direction in which the sectors 12 are superimposed is supplied to the drive coil 4b of the actuator again to perform positional adjustment. Subsequently, a positive electric current for driving the sectors 12 in the closing direction in which the sectors 12 are closed is supplied to the drive coil 4b, so that the sector drive lever 9 is rotated, whereby the sectors 12 are closed in conjunction therewith. At this time,

in Fig. 1, when the sector drive lever 9 is rotated counterclockwise, the detection spring 17 of the synchronous switch 5 is returned to an original position, whereby the first straight portion of the detection spring moves away from the detection pin 18. Accordingly, the direction of the output signal from the synchronous switch 5 is changed, and the CPU receives the output and verifies the initiation of the operation to close the aperture 1a. In this manner, the sectors 12 are returned to their original positions. However, the supply of power to the drive coil 4b is continued in the same direction to the drive coil 4b for a predetermined time period for positional adjustment even after the returning motion of the driving force transmitting member 7 and the sectors 12 is completed, and then the supply of power is turned OFF to return them to their initial positions. As shown in Fig. 5, one positive electric current pulse (one-pulse drive) is applied to the drive coil 4b to drive the sectors 12 from the aperture-opening position (Fig. 2) to the aperture-closing position (Fig. 1). Upon termination of the supply of power to the drive coil 4b, image data accumulated in the image pickup device by exposure is supplied to the CPU, whereby one operation to take a picture is completed. Data read is supplied to the storage device in the camera body and is stored therein.